RICCAR

This manual also works for the following models:
Anysew JH811ATF
Gemsy JH811ATF
Feiyue FY811
Family Sew FS-811
Yamata FY811

## INSTRUCTION BOOK

# Automatic Zig-Zag

LIGHTWEIGHT FREE-ARM
AUTOMATIC ZIG-ZAG
**MODELS 444 SP & 494 EX**

You are now the owner of a new **Riccar** Sewing Machine, a product which has been designed to carry out a wide variety of sewing tasks simply and efficiently.

This Instruction Book has been written for you to help you use and enjoy fully the benefits that it can provide.

Please read the Book carefully *before* you actually start to use the Machine and take each operation step-by-step. A thorough understanding of all the functions will be rewarded by many years of sewing pleasure.

If you have any questions regarding its use first contact your original supplier, who should be able to assist you with any problems.

**RICCAR (U.K.) Ltd, Riccar House, Nuffield Way, Abingdon, Oxfordshire OX14 1RS.**
**Tel: Abingdon (0235) 28383.**

As soon as you are familiar with the various Parts and Controls which are covered in the first pages of this Book you will wish to start sewing. Below are listed a number of good habits you should try to remember each time you sit down at your Machine.

1. Whenever you turn the Balance Wheel manually, always do so towards you, NEVER away from you.

2. Never alter any of the Controls with the Needle in the fabric while the Machine is stationary — otherwise you will break Needles.

3. Never run a threaded Machine without fabric under the Presser Foot — otherwise the Machine may 'jam' due to thread being forced into the Shuttle.

4. Always practice first on a spare piece of the same material you are going to sew, particularly if it is a new operation you have not used before.

*Then check the following:-*

(a) The Presser Foot and Needle Clamp Screw have been securely fitted.

(b) The Needle is correctly fitted and that it is suitable for the fabric being sewn, and that it is not blunt or bent.

(c) The thread type, size and colour are correct both on top of the Machine and in the Bobbin.

(d) The threading of both top and bottom are correct — ensure you raise the Presser Foot before threading.

(e) Both threads are drawn back under the Presser Foot.

(f) The correct Presser Foot is fitted for the operation you are going to sew.

(g) The Presser Foot Pressure setting is correct.

(h) You have changed the Stitch Selector Control to your chosen stitch. (Where applicable.)

(i) The Stitch Width and Stitch Length Controls are correct — remember the settings given can only be as a guide and may require adjustment according to the fabric and thread you are using.

(j) The Tensions have been adjusted to produce a well balanced Stitch.

(k) When threading the machine, ensure that the Presser Foot Lifting Lever is ALWAYS raised to the SECOND POSITION (B) (see Pages 6 and 9) to release pressure in the Tension Unit.

*As the Riccar policy is one of continuous improvement, we reserve the right to alter specifications and/or designs as may be considered necessary. Details of such amendments will be made available on request.*

**This Instruction Book covers Two Models, 444SP & 494EX. The instructions contained herein apply to BOTH MODELS, unless otherwise stated.**

## INDEX


About your Machine . . . . . 3
Back Tacking . . . . . 13
Blind Hem Sewing . . . . . 32
Bobbin Case, removing . . . . . 16
Bobbin Case, threading & inserting . . . . . 17
Bobbin Thread, to draw up . . . . . 19
Bobbin Winding . . . . . 16
Buttonholes, Automatic . . . . . 28
Cleaning the Machine . . . . . 35
Cleaning the Shuttle Race . . . . . 36
Darning . . . . . 33
Double Action Stitch (Model 494 only) . . . . . 27
Double Overlock Stitch (Model 494 only) . . . . . 27
Dust Cover . . . . . 3
Electric Wiring & Safety . . . . . 3 & 6
Elastic Overlock Stitch (Model 494 only) . . . . . 27
Embroidery, free hand . . . . . 33
Fastening Seams . . . . . 21
Feather Stitch (Model 444 only) . . . . . 24
Feed-Dog Teeth, to clean . . . . . 35
Feed-Dog Teeth, to lower . . . . . 13
Free-Arm sewing . . . . . 37
Foot Control . . . . . 6
Hemming . . . . . 31
Hints of sewing . . . . . 1
Knowing your machine parts . . . . . 4 & 5
Lingerie Stitch (Model 494 only) . . . . . 26
Mending . . . . . 24
Monogramming . . . . . 33
Needles, to fit and change . . . . . 8
Needle/Thread/Fabric Chart . . . . . 7
Oiling the Machine . . . . . 34
Pattern Selection . . . . . 14
Presser feet, to remove and attach . . . . . 10
Presser foot Holder, to remove or attach . . . . . 11
Presser foot, pressure . . . . . 9
Problem Charts . . . . . 38 & 39
Raceway, to clean . . . . . 36
Reverse Sewing . . . . . 13 & 21
Ric-Rac Stitch . . . . . 23
Seam Finishing (Fastening Seams) . . . . . 21
Sewing Lamp . . . . . 6
Sewing Speed (Foot Control) . . . . . 6
Shell Hem . . . . . 26
Smocking Stitch (Model 494 only) . . . . . 26
Stitch Formations (Tensions) . . . . . 12
Stitch Length . . . . . 13
Stitch Patterns . . . . . 14
Straight Stitching . . . . . 20
Stretch Overlock Stitch . . . . . 25
Thread Tensions, top and bottom . . . . . 12
Threading, top of Machine . . . . . 18
Threading, Bobbin case . . . . . 17
Three-step Zig-Zag . . . . . 24
Triple Straight Stitch . . . . . 23
Turning a corner . . . . . 21
Twin-needle fitting and sewing . . . . . 22
Zips, to insert . . . . . 30
Zig-Zag Stitch . . . . . 20

**IMPORTANT: when leaving the sewing machine unattended, the mains switch of the machine must be switched off or the plug must be removed from the socket-outlet.**

**When servicing the sewing machine or when removing covers or changing lamps, the machine must be disconnected from the supply by removing the plug from the socket-outlet.**

## MAINS PLUG FITTING (FIG. 5)

## IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

BLUE — NEUTRAL BROWN — LIVE

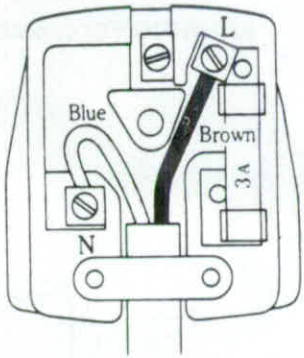
As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows: The wire which is coloured BLUE must be connected to the terminal which is marked with the letter 'N' or coloured black. The wire which is coloured BROWN must be connected to the terminal which is marked with the letter 'L' or coloured red. Fit a 3 amp fuse when using a 13 amp (BS 1363) fused plug. If any other type of plug is used protect with a 5 amp fuse either in the plug or adaptor or at the distribution board. If in doubt consult a competent electrician before use.

**ALWAYS DISCONNECT FROM THE MAINS FIRST.**

**This Appliance complies with EEC Directives 76/889/EEC and 82/499/EEC (BS800 1977 and BS800 1983), covering suppression against Radio interference.**

## MAINS PLUG FITTING

FIG. 5




## ABOUT YOUR MACHINE

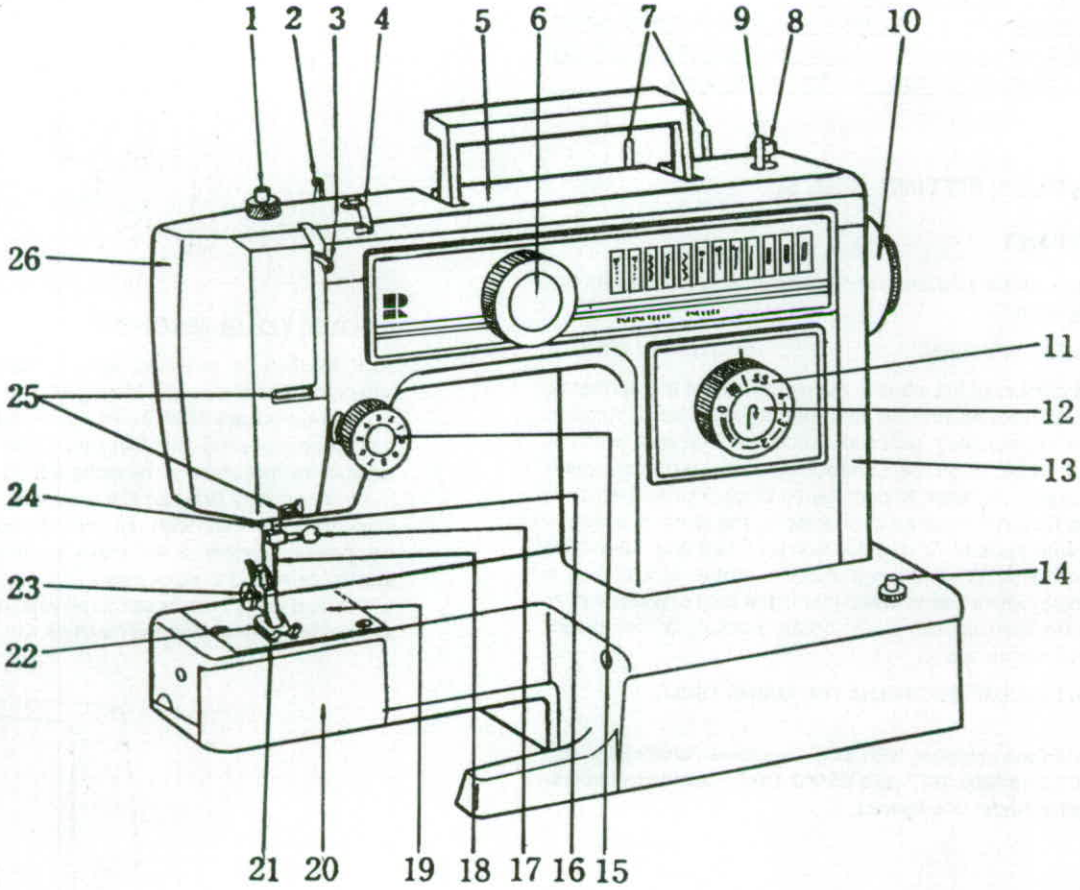
Your Machine is provided with a Plastic Dust Cover which should be placed over the Machine when not in use. (FIG. 6)

Two pockets are fitted at the rear which will be found useful for accommodating the Flat-Bed Extension Plate and other small items that you may be using during Sewing operations.

The Accessory Box can also be placed diagonally across the Free-Arm, so that with all the Accessories and ancillary equipment together, it will make a complete unit and thereby easy to carry and to store away.

The 'fold-away' handle can be allowed to protrude through the slot in the Cover so that the machine can be easily transported.

FIG. 6


1
2
3
4
5
6
7
9
8
10
26
25
24
23
22
11
12
13
14
21
20
19
18
17
16
15

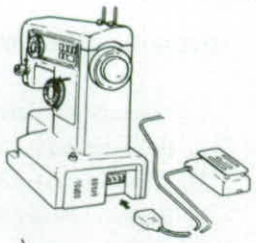
## KNOWING YOUR MACHINE (Continued)

1. Pressure regulator (Patch-O-Matic
2. Rear thread guide
3. Thread take-up lever
4. Bobbin winder thread guide
5. Top cover
6. Pattern selector dial
7. Spool pins
8. Bobbin winder stop
9. Bobbin winder spindle
10. Balance wheel
11. Stitch length dial
12. Reversing button
13. Belt cover
14. Switch
15. Thread tension dial
16. Needle bar
17. Needle clamp and screw
18. Needle
19. Needle plate
20. Shuttle cover
21. Feed dog
22. Presser foot
23. Presser foot thumb screw
24. Presser bar
25. Face plate thread guides
26. Face Plate

## HOW TO CONNECT THE MACHINE TO THE POWER SUPPLY

1. Fit the machine plug into the machine.
2. Plug the machine to the power supply.

Note: * Before plugging in the machine, ensure that the voltage and number of cycles indicated, is conformed to your electrical power supply. SEE PAGE 3 FOR WIRING PLUG.

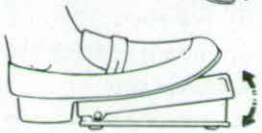


## HOW TO USE THE SPEED CONTROLLER (FOOT CONTROL)

Sewing speed can be varied by the speed controller. The harder you press on the controller, the faster the machine runs.

Note: * By releasing the controller, the machine stops running automatically.

* Before using the machine, practice controlling the speed with-out threading.



## SEWING LAMP

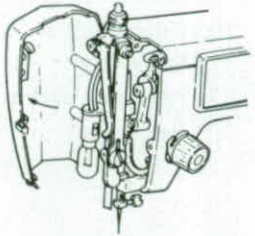
The sewing lamp is located behind the face plate.

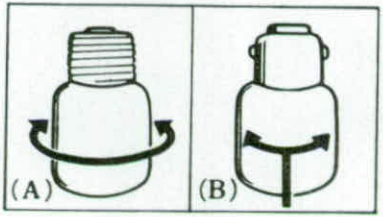
Bulb type (A) : • To remove ...Unscrew
• To replace ...Screw

Bulb type (B) : • To remove ...Push and twist counter-clockwise
• To replace ...Push and twist clockwise

Note: * Before replacing a bulb, disconnect the machine from the power supply.

* Bulbs are available from sewing machine retailers. (Use a 15-Watt bulb)






**Caution!**

Before leaving the machine, changing parts or doing any other work on it, always disconnect the plug from the wall socket.
Never place anything on the speed controller, otherwise the machine will start inadvertently or the controller or motor may burn out.

## NEEDLE, THREAD AND FABRIC GUIDE

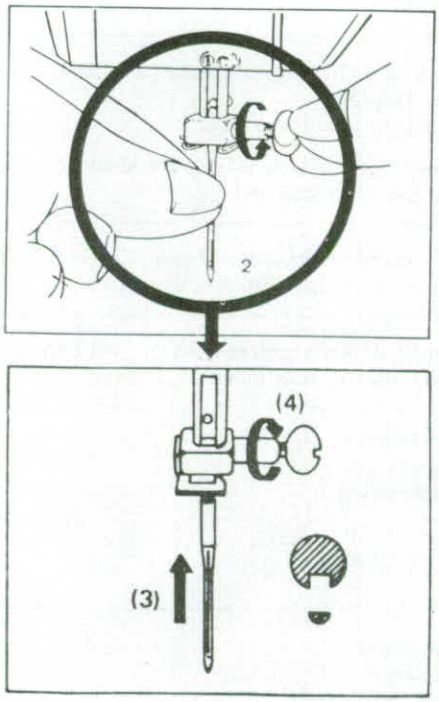
| FABRIC | NEEDLE SIZE | | COTTON THREAD | SYNTHETIC THREAD | APPROXIMATE STITCH LENGTH | |
|---|---|---|---|---|---|---|
| | BRITISH | CONTINENTAL | | | PER INCH | PER CM |
| Fine Fabrics such as, Net, Organdie, Lace, Lawn, Viole, Chiffon, Tulle, etc. | 9—11 | 65—75 | 50—60 | | 12—15 | 5—7 |
| Lightweight Fabrics such as Gingham, Muslin, Fine Poplin, Taffeta, Silk, Seersucker, etc. | 11—14 | 75—90 | 50 | | 12—14 | 5—6 |
| Mediumweight Fabrics such as Poplin, Cotton, Suitings, Corduroy, Linen, Satin, Brocade, Velvet, etc. | 11—14 | 65—90 | 40 or 50 | | 12—14 | 5—6 |
| Heavyweight Fabrics such as Sailcloth, Twill, Denim, Coated Fabrics, Canvas, Furnishings, Tweed, etc. | 14—18 | 90—110 | 40 | | 8—10 | 4—6 |
| Stretch Fabrics — *Lightweight* (Natural Fabrics) | 9—12 | 65—80 (Ballpoint or Stretch Stitch) | 50 | Polyester or Poly/ Cotton | 10—14 | 4—6 |
| (Man-Made Fabrics) | 11—12 | 75—80 (Ballpoint or Stretch Stitch) | — | Polyester or Poly/ Cotton | 10—14 | 4—6 |
| Stretch Fabrics — *Heavyweight* (Natural Fabrics and Man-Made Fabrics) | 12—14 | 80—90 (Ballpoint or Stretch Stitch) | 40 | Polyester or Poly/ Cotton | 10—14 | 4—6 |

**Use Needles only of Systems 705, 705H, HAX1 or 15X1. Ballpoint & Stretch Stitch Needles of the above Systems are available from most Sewing Shops and Stores, but in case of difficulty, contact us direct.**

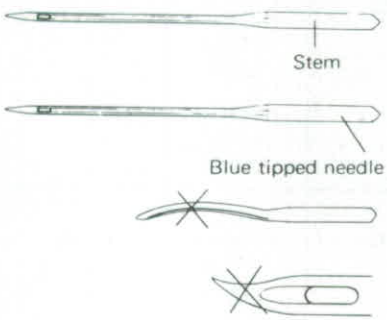
**NOTE:** Included with your spare Needles in the Accessory Box, you will find two 'Blue' Shank Needles size 75(11). These can be used as 'Stretch Needles' as described above.

## CHANGING THE NEEDLE

1. Turn the blance wheel towards you until the needle is at is highest position.
2. Loosen the needle clamp screw by turning its top edge towards you. Remove the needle from the clamp.
3. Place the new needle into the needle clamp with it's flat side facing away from you.Push the needle up into needle clamp as far as possible.
4. Tighten the needle clamp screw firmly.




## TO SELECT A SUITABLE NEEDLE

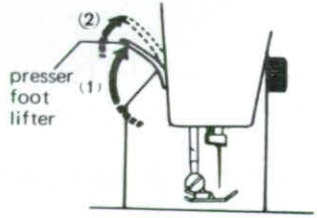



- A number indicating the size of needle is marked on the stem.The higher the number, the thicker the needle.
- A BLUE TIPPED needle is supplied with the machine.

* Do not use any needle which is bent or blunted.

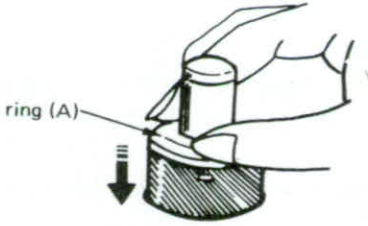
## RAISING OR LOWERING THE PRESSER FOOT

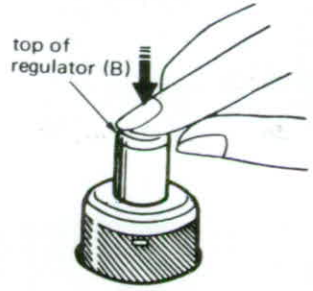
1. By raising or lowering the presser foot lifter, the presser foot goes up and down respectively.
2. For additional clearance, the foot lifter can be raised higher to sew on heavy fabrics.




## REGULATING THE PRESSER FOOT PRESSURE
**(Patch-O-Matic)**

To release the pressure, push ring (A) downwards. This causes the regulator to spring up to its highest position. The material is now free from any pressure of the presser foot.
For sewing thin or light materials, push regulator (B) down just a little to provide the light pressure required.
If you are sewing thick or heavy materials, push the regulator (B) farther down to increase the pressure on the material.



## REMOVING AND ATTACHING THE PRESSER FOOT

### To Remove:

1 Turn the balance wheel towards you until the needle is at its highest position. Raise the presser foot by lifting the presser foot lifter.

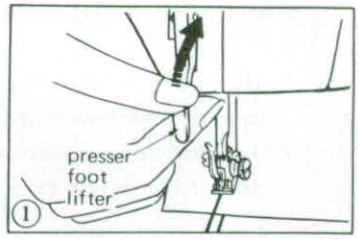
2 By lifting the lever on the back of the foot holder, the presser foot will drop off.

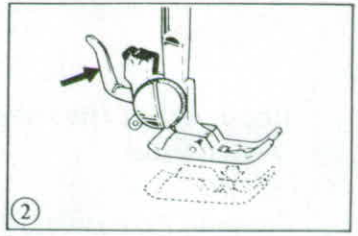
Note: *Do not force the presser foot to remove it.

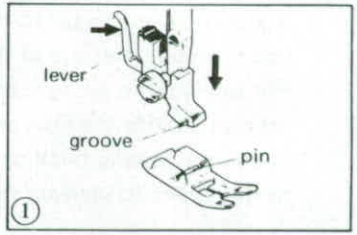
### To Attach:

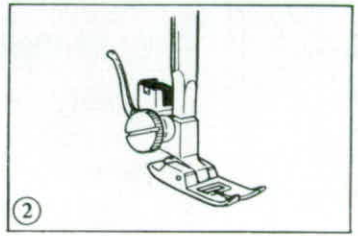
1 Place the presser foot so that the pin on the foot lies just under the groove of the foot holder. Lower the foot holder.

2 When the presser foot lifter is raised you'll find the presser foot is locked in place.



## REMOVING OR ATTACHING THE FOOT HOLDER

It is not necessary to remove the foot holder unless you use blind stitch hem guide or to allow clearance when you clean the feed dog.

### To Remove:

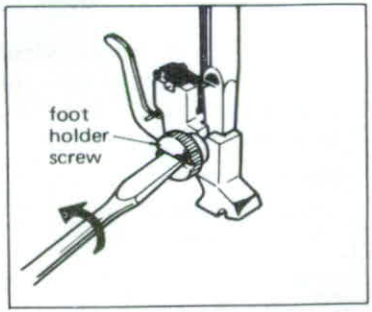
Raise the needle to its highest position by turning the balance wheel towards you, and lift the presser foot.

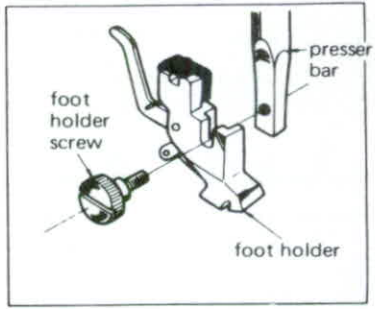
Remove the foot from the foot holder and loosen the foot holder screw with a screwdriver.

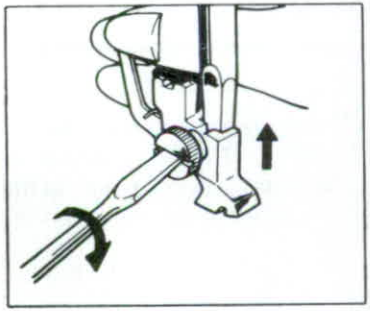
### To Attach:

Raise the needle to its highest position by turning the balance wheel towards you, and lift the presser foot lifter.

When attaching the foot holder to the presser bar, push it up as far as it will go and tighten the screw dirmly with a screwdriver.

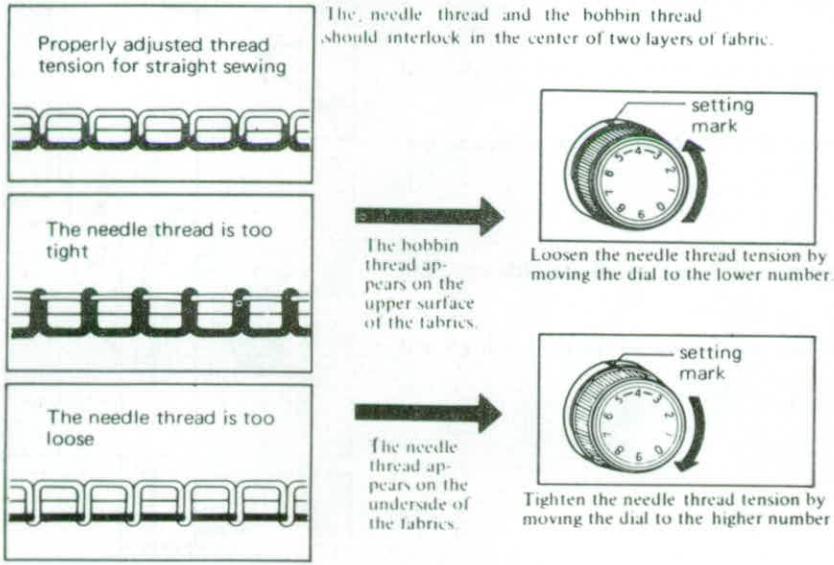


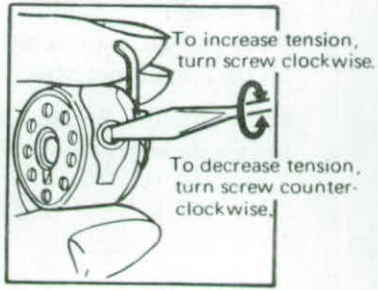



## REGULATING THE THREAD TENSION

Generally, thread tension should be controlled by the thread tension dial. Bobbin thread tension has been adjusted at the factory and readjustment is scarecely needed except for special stitch, thread and fabric. Bobbin thread tension is just right when you can pull the thread from bobbin case easily with a little resistance.
Thread tension may be adjusted by tightening or loosening the thread tension dial, if necessary.


Properly adjusted thread tension for straight sewing
The needle thread and the bobbin thread should interlock in the center of two layers of fabric.
The needle thread is too tight
The bobbin thread appears on the upper surface of the fabrics.
setting mark
Loosen the needle thread tension by moving the dial to the lower number.
The needle thread is too loose
The needle thread appears on the underside of the fabrics.
setting mark
Tighten the needle thread tension by moving the dial to the higher number

*How to adjust the bobbin thread tension

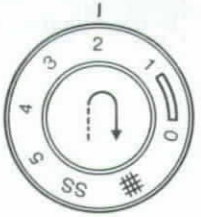


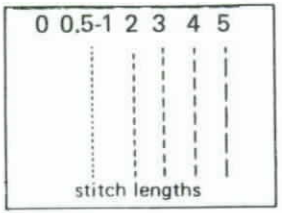

*There are many reasons for having to reset your tension. The best tension for one fabric may not be correct for another. The required tension depends upon the stiffness of fabric, thickness of the fabric, numbers of layers of fabric being sewn, as well as the type of stitch you are making.

*It is better to test the stitching on a scrap of the fabric you are using before starting to make a garment.

## STITCH LENGTH/REVERSE SEWING BUTTON AND LOWERING THE FEED DOG TEETH

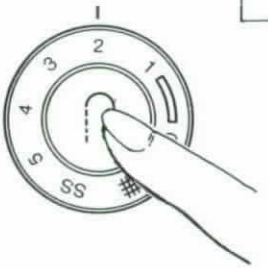
To change the length of the stitches proceed as follows:
Turn the dial so that the number for the requires stitch length is at setting mark. The numbers indicate the approximate stitch lengths in mm. The lower the number, the shorter the stitch.



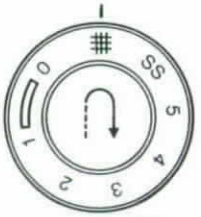

### REVERSE STITCH: /FOR BACK-TACKING)

Press the centre of the stitch length dial (reverse button) and hold in. Fabric will immediately start feeding backwards. Release button and machine will resume normal forward sewing.
Very useful for fastening ends of seams and darts without having to tie threads, and for back-tacking and strengthening seams.




### LOWERING THE FEED DOG:

Embroidering and darning are best carried out with the feed mechanism lowered. This is achieved by setting the stitch length dial at ▦ , which lowers the feedteeth and allows the material to be moved freely under the needle. The feed starts its normal function again as soon as you turn the stitch length dial to "0" or beyond it.



## THE PATTERN SELECTOR DIALS, MODELS 444SP & 494EX

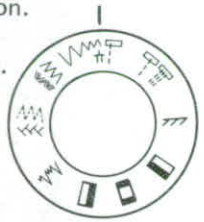
Before selecting any Stitch Pattern, always raise the needle to its highest point first. The desired pattern can be selected by turning the dial so that the symbol of the pattern aligns with the small mark on the stitch plate. The BLUE symbols are for Normal Sewing, the RED symbols are for 'Stretch' Sewing (see below).
When the BLUE & RED symbols are shown together, set the dial between the symbols.

When sewing with Twin-needles NEVER set the Zig-Zag width beyond the ⋔ symbol.

### MODEL 444 SP

The normal stitches shown in BLUE are as follows:

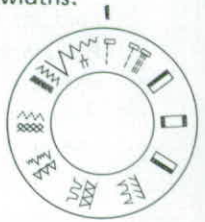
Straight Stitch, centre needle position.
Straight Stitch, left needle position.
Zig-Zag Sewing with variable widths.
Stretch Blind Hem stitch.
Three-step Zig-Zag stitch.



### MODEL 494 EX

The normal stitches shown in BLUE are as follows:

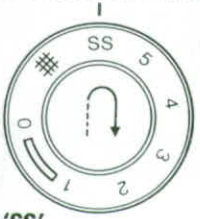
Straight Stitch, centre needle position.
Straight Stitch, left needle position.
Zig-Zag Sewing with variable widths.
Stretch Blind Hem stitch.
Three-step Zig-Zag stitch
Double Action Stitch.
Lingerie Stitch.



TO ACHIEVE STRETCH STITCHES FIRST SET THE STITCH LENGTH CONTROL TO 'SS'.

Stretch Stitches in RED are as follows:

Triple Straight Stretch Stitch.
Ric-Rac Stitch.
Stretch Overlock Stitch.
Feather Stitch.




**When the Stitch Length Dial is moved away from the 'SS' setting, the machine reverts back to normal sewing.**

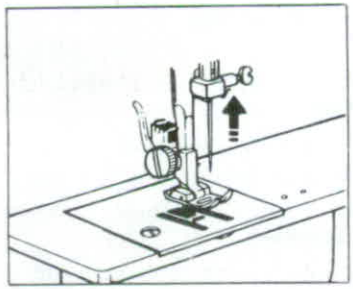
Stretch Stitches in RED are as follows:

Triple Straight Stretch Stitch.
Ric-Rac Stitch.
Stretch Overlock Stitch.
Smocking Stitch.
Elastic Overlock Stitch.
Double Overlock Stitch.

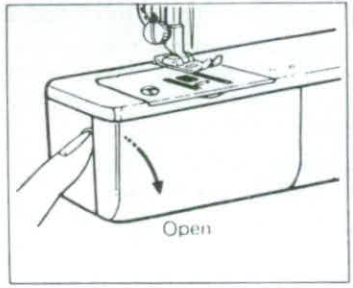
◧ → ◻ → ◨ Automatic Buttonholing, shown in GREEN.

## REMOVING THE BOBBIN CASE AND BOBBIN

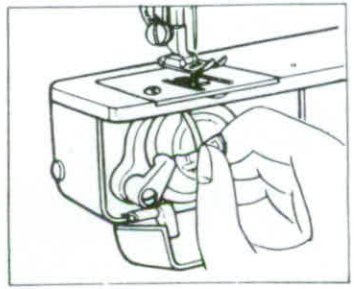
1. Raise the presser foot and turn the balance wheel towards you until the thread take-up lever is at its highest position.



2. Open the shuttle cover.

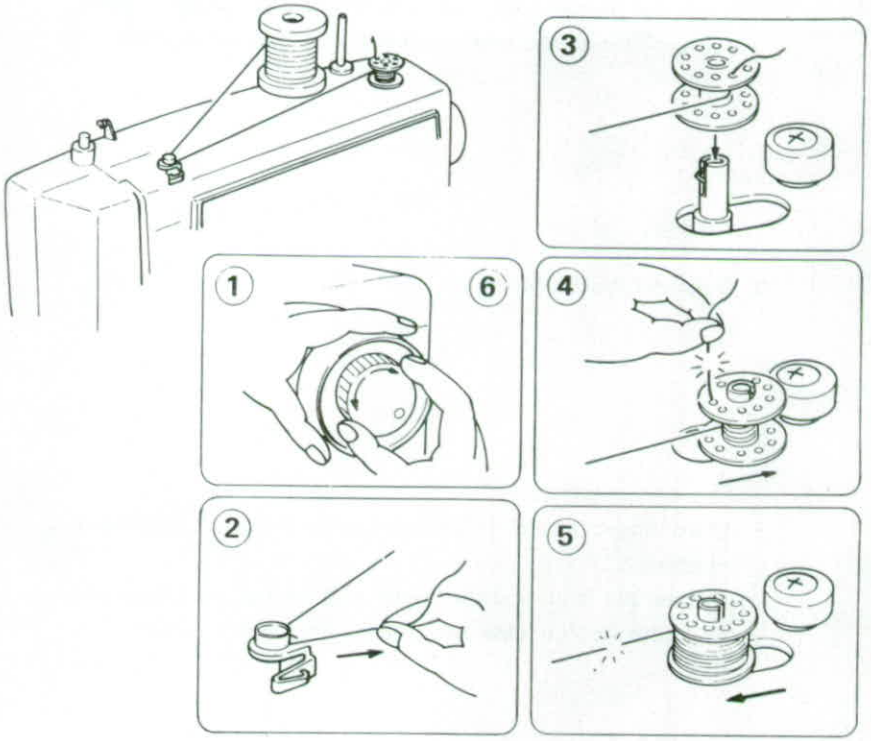



3. Open hinged latch of bobbin case and pull bobbin case out of machine.
   Release the latch and the bobbin will fall out. As long as you hold the bobbin case latch open, the bobbin cannot drop out.



## WINDING THE BOBBIN

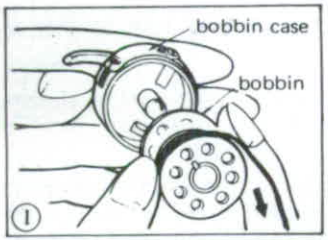
1. Release clutch by turning clutch knob toward you.
2. Draw thread from spool through bobbin winder tension disc as shown.
3. Pull end of thread through hole in bobbin as shown.
4. Place bobbin onto bobbin winder shaft with end of thread coming from the top of the bobbin. Push bobbin winder shaft to the right until it clicks. Holding onto end of thread, start machine. When bobbin is slightly filled, snip off end of thread.
5. Wind thread until winder stops. Remove bobbin. Clip thread.
6. Tighten clutch knob.



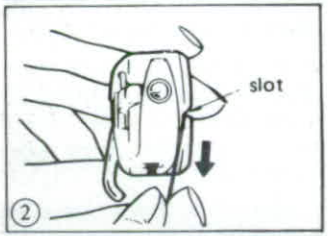
## THREADING THE BOBBIN CASE

Hold the bobbin between the thumb and forefinger of your right hand and pull off about 15 cm (6 inches) of thread.

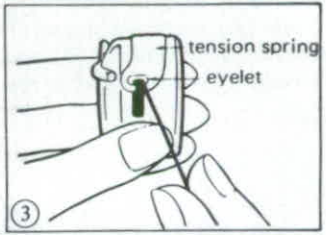
1. Hold the bobbin case in your left hand as shown and place the filled bobbin inside.



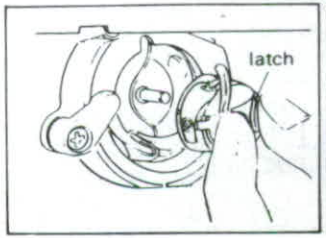

2. Pull the thread into the slot in the edge of the bobbin case.

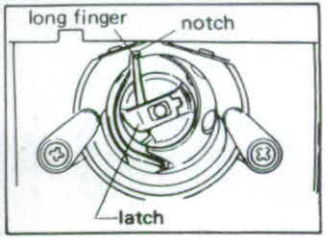



3. Now pull the thread under the tension spring and into the thread eyelet.




To insert the bobbin case and bobbin .....
Ensure that about 15 cm (6 inches) of thread extends out of bobbin. Hold the bobbin case so that long finger on case points up. Open the latch of bobbin case. Slip the bobbin case over the center pin of hook and press in place until long finger of the bobbin case enters notch. Release latch and press down.



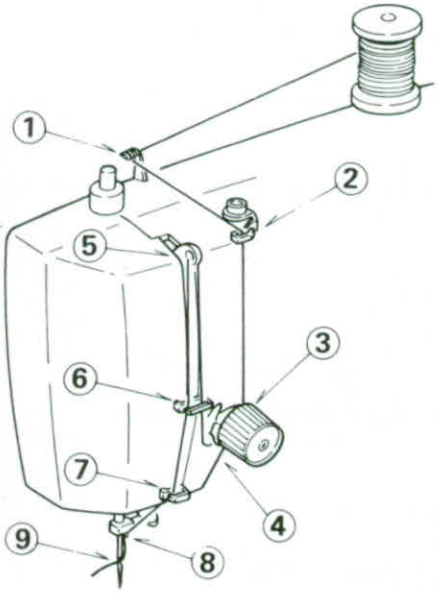
## THREADING THE TOP OF THE MACHINE

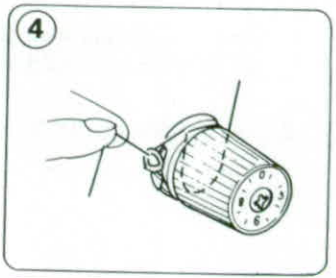
Place spool on spool pin as shown, with thread coming from the back of the spool.

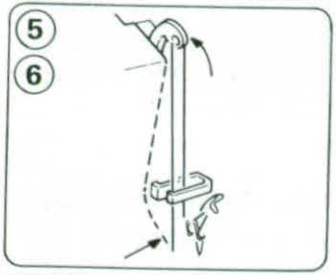
Draw thread through top thread guides. Holding spool stationary with right hand, pull the end of the thread between the tension discs as shown above (3).

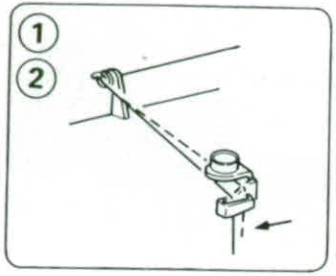
Pull the end of the thread taut with left hand. This will pull the spring wire up and past the end of the hook. The thread will then slip into the hook when the spring is released as in (4).

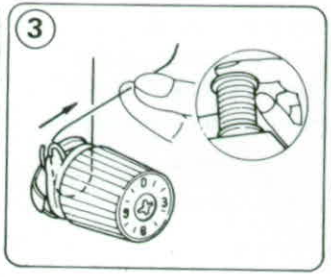
Release spool of thread and thread machine through take-up lever (5) and thread guide (6) as shown above. Thread then passes through guides (7) and (8). Thread needle (9) from front to rear.

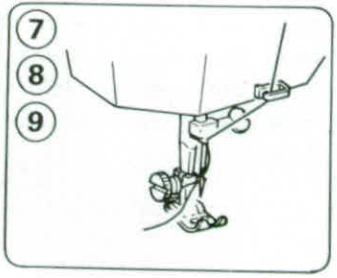


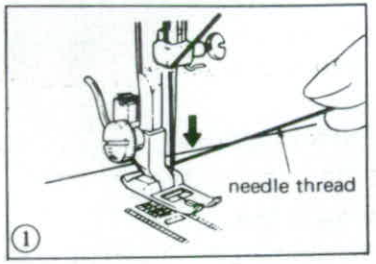



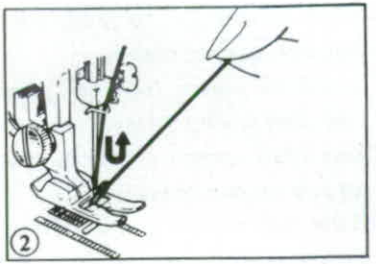



## DRAWING UP THE BOBBIN THREAD

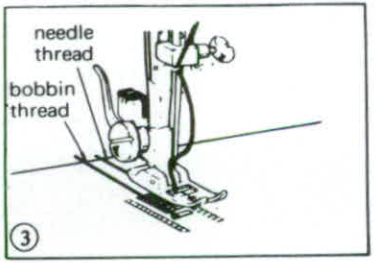
1. Hold the end of the needle thread with your left hand.




2. Turn the balance wheel showly towards you with your right hand until the needle goes down and comes up. Then stop the balance wheel when the take-up lever is at its highest pisition.
   Lightly draw up the needle thread forming a loop with the bobbin thread.




3. Pull about 15 cm (6 inches) of both threads away from you under the presser foot.



## STRAIGHT STITCH AND ZIG-ZAG STITCH

Presser foot . . . . . zig-zag foot
Pattern selector . . . . . or (for straight stitch)
(for zig-zag stitch)
Stitch length dial . . . . . .0.3 ~4

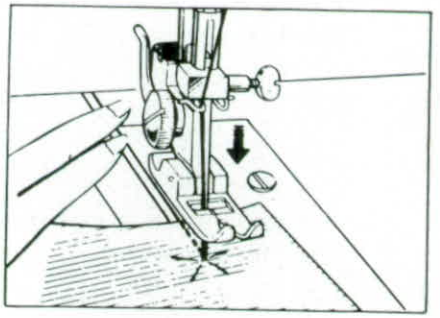
zigzag foot

**Starting to Sew**

1 Be sure both the threads are drawn back under the presser foot
2. While holding the threads with your left hand, turn the blance wheel toward you to bring the needle into the fabric where you wish to start sewing.
3. Lower the presser foot, and press the speed controller gently, then start sewing slowly.

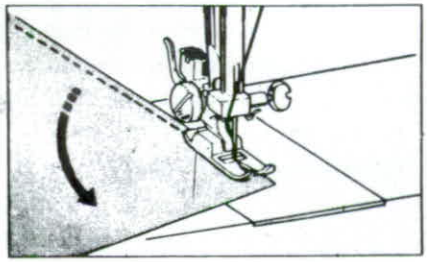
*Sew a few reverse stitches by pushing reverse button for reinforcing the cnd of seams.

*Raise the needle to its highest position before turning the pattern selector dial and stitch width dial.



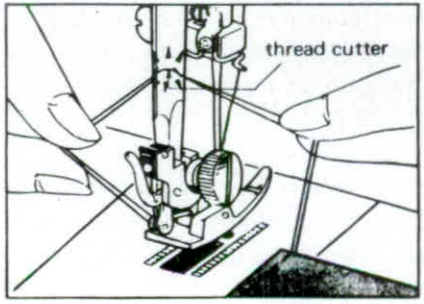
**Turning Corners**

1. Stop the machine, and turn the balance wheel toward you to bring the needle down into the fabric. Raise the presser foot.
2. Pivot the fabric around the needle to change direction as desired.
3. Lower the presser foot and continue the sewing.



**Fastening Seams, Reverse Sewing**

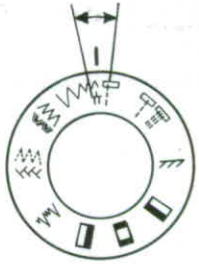
1. For fastening the ends of seams, press down the reversing button and sew several reverse stitches.
2. To remove the fabric, raise the presser foot and draw the fabric away from you.
3. Sever threads on thread cutter at the rear of presser bar or with a pair of scissors.
   Leave about 15 cm (6 inches) of thread hanging from the needle eye.

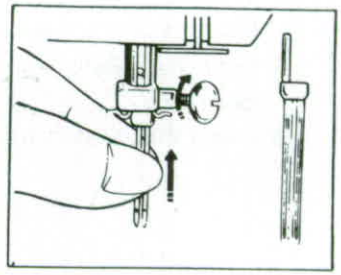


## SEWING WITH TWIN NEEDLES

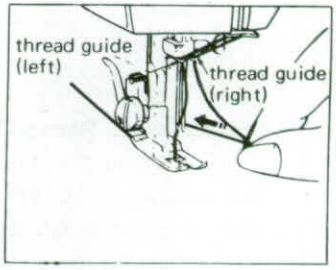
Pretty coloured patterns can be made by sewing with a twin needle and different-coloured threads.

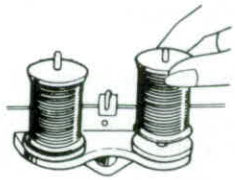
| | |
|---|---|
| Presser foot | zig-zag foot |
| Pattern selector | |
| Stitch length dial | 0.5 to 1 |

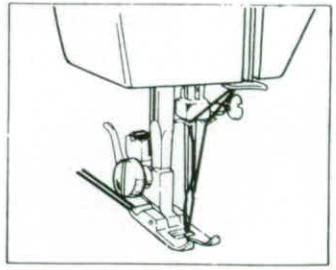




1. **NEVER set the zig-zag width beyond the mark. otherwise a needle may hit the needle plate.**
2. Insert the twin needle in the same way as a single one (flat side away from you).
   Place two spools of threads on the spool pins.
3. Pass both threads upto face plate thread guides as for single needle stitching.
4. Separate the threads on needle bar thread guides and needle eyes.





Note: *Be sure to place the two round felts provided in the accessories over the spool pins. To turn a corner with a twin needle, raise the needles out of the fabric, otherwise the twin needle will break or bend.

## TRIPLE STRETCH STITCH & RIC-RAC STITCH

### TRIPLE STRAIGHT STRETCH STITCH

| | |
|---|---|
| **Presser foot** | **.zigzag foot** |
| **pattern selector** | |
| **Stitch length dial** | **.S.S.** |

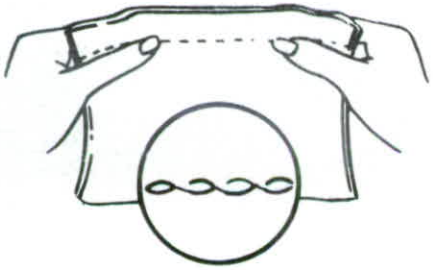
Triple Straight Stitch is far stronger than ordinary Straight Stitch because it locks three times – forwards, backwards and forwards again.

In addition to its extra strength it is flexible in use and is therefore very suitable for curved seams which take a lot of strain, such as crotch and armhole seams.

It is particularly suitable when sewing Sportswear in both Stretch and non-Stretch Fabrics and for reinforcing and repairing damaged seams.

It can also be used to Top-Stitch around Lapels, Collars and Cuffs to give a professional finish to your Garments.

Remember however, it is difficult to unpick, so be sure to sew in the correct place the first time.



### RIC-RAC STITCH

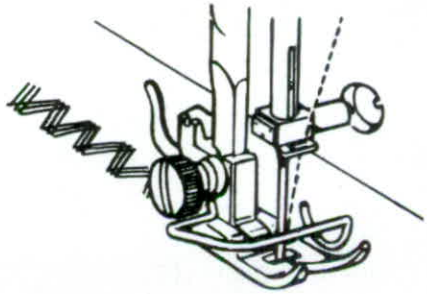
| | |
|---|---|
| Presser foot | .zigzag foot |
| Pattern selector | |
| Stitch length dial | .S.S. |

Ric-Rac is the Zig-Zag equivalent to the Triple Straight Stitch left.

It is a very strong form of Zig-Zag which is formed by the Machine making three Stitches on either side on the Zig-Zag, as opposed to ordinary Zig-Zag which has only one.

It can be used as a quick method of neatening a raw edge and is ideal for edging Neckbands, Armholes and Sleeves.

It can also be used as a Decorative Top Stitch, using either a contrasting or matching Thread, for example attaching a Patch or a Pocket to Jeans etc.



## THREE-STEP ZIG-ZAG

This stitch is very suitable for mending tears. It can also be used for reinforcing stretch materials and sewing on fabric parts. It is a very strong Stitch because as its name implies, it makes three short stitches on each side where the normal Zig-Zag makes only one.

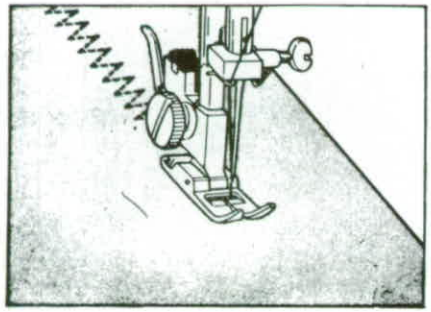
| | |
|---|---|
| Presser foot | zigzag foot |
| Pattern selector | |
| Stitch length dial | 0.3 to 5 |

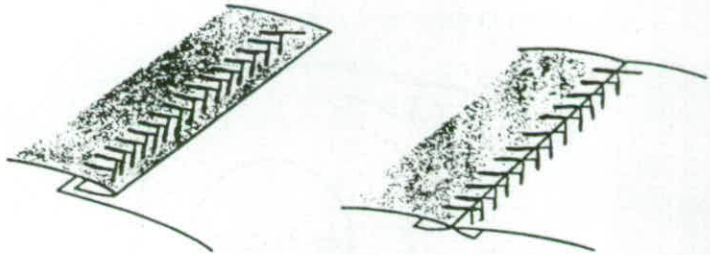
## FEATHER STITCH (MODEL 444SP ONLY)

With this type of sewing, seams are elastic and fabrics can be joined firmly. Use the feather stitch to sew bathing suits, mend girdles and bras and as a decorative top stitch.

| | |
|---|---|
| Presser foot | zigzag foot |
| Pattern selector | |
| Stitch length dial | SS |

Note: *Use a BLUE TIPPED needle.
The blue tipped needle effectively prevents skipped stitches.

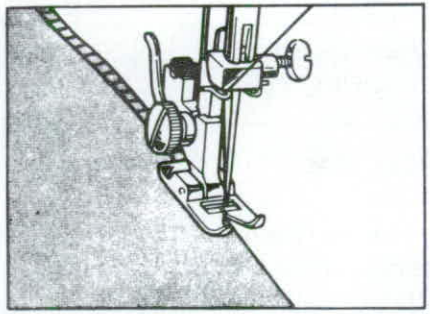




## STRETCH OVERLOCK STITCH

With this seam it is possible to provide raw edges, especially on easily fraying fabrics, with a good-locking and lasting edge finish. It is also a very valuable stitch for attaching neck-bands.

| | |
|---|---|
| Presser foot | .zigzag foot |
| Pattern selector | |
| Stitch length dial | .S.S. |



Place the fabric under the presser foot so that the stitches are made over the edge.

Lower the presser foot and start sewing.

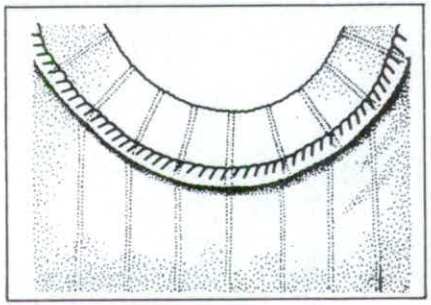
Guide the material lightly as shown.

Sew on a piece of waste fabric to check the machine setting.

The overlock stitches are formed correctly when the needle sewing to the right and it just misses the fabric edge.

Note: *Use a BLUE TIPPED needle.

The blue tipped needle effectively prevents skipped sitches.



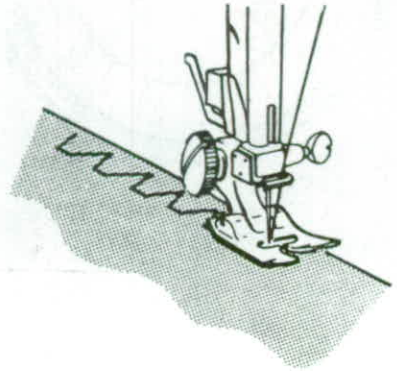
## LINGERIE STITCH (MODEL 494 EX ONLY)

Lingerie Stitch is for Seaming and Overcasting sheer, soft fabrics in one operation. It also produces a delicate shell hem on lingerie and other fine garments.

| | |
|---|---|
| Presser foot | zigzag foot |
| Pattern selector | |
| Stitch length dial | 1 to 5 |

### SHELL HEM

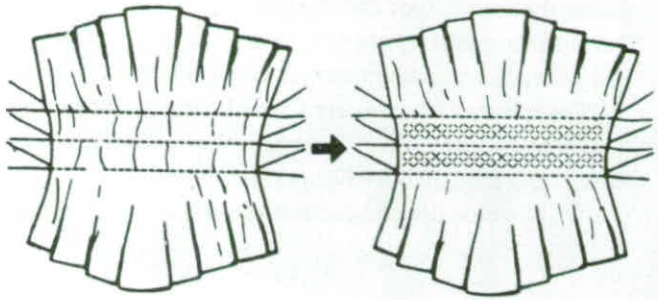
Turn a raw edge under 0.5 inches and press. Set the Stitch Length at 1.5 - 2. Place the fabric right side up so that the zig-zag part of the Stitch sews just over the folded edge, pulling the fabric to form a shell hem.



## SMOCKING STITCH (MODEL 494 EX ONLY)

Smocking, which takes so long to sew by hand, is simply and attractively produced on this machine to smock the front of a dress or blouse using a matching or contrasting thread. The design will appear as a series of small diamonds. It can also be used as a decorative stitch in parallel rows.

| | |
|---|---|
| Presser foot | zigzag foot |
| Pattern selector | |
| Stitch length dial | SS |



Note *Use a BLUE TIPPED needle.
The blue tipped needle effectively prevents skipped stitches.

## DOUBLE ACTION STITCH (MODEL 494 EX ONLY)

This stitch is ideal for producing flat overlapped seams on almost any type of fabric and a bolder effect will result from sewing with a contrasting thread.

It can also be used to insert lace or braid, to give a decorative edge to cuffs, pocket flaps etc., and for patchwork.

| | |
|---|---|
| Presser foot | .zigzag foot |
| Pattern selector | |
| Stitch length dial | .1 to 3 |

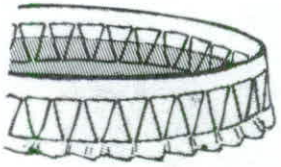
## DECORATIVE EDGING

Set the Stitch Length between 0.5 & 1. Turn the raw edge under 0.5" and press. Place the fabric, right side up with the middle of the turnover under the centre of the presser foot, so that the stitch sews on the fold and just over the raw edge underneath.

## DOUBLE OVERLOCK (MODEL 494 EX ONLY)

Double Overlock has three main uses. It is perfect for attaching flat elastic when repairing or making lingerie; and for overcasting, and seam and overcast in one, on slightly stretch fabrics and non-stretch ones such as linen, tweed, and medium to heavy weight cotton.

| | |
|---|---|
| Presser foot | .zigzag foot |
| Pattern selector | |
| Stitch length dial | SS |



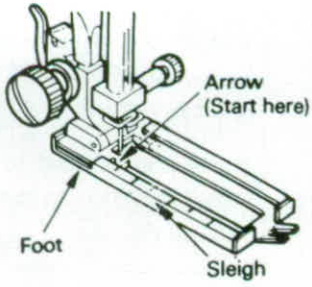
## ELASTIC OVERLOCK (MODEL 494 EX ONLY)

This stitch is suitable for overcasting and seam and overcast in one, on light and medium weight stretch and non-stretch fabrics. Also for over lapped seams.

## SEWING BUTTONHOLES

The buttonhole mechanism built-in this machine makes it possible to sew button holes in a short time without turning the material.

| | |
|---|---|
| Presser foot | buttonhole foot |
| Pattern selector | ◧ → □ → ◨ → |
| Stitch length dial | 0.3 to 2 |



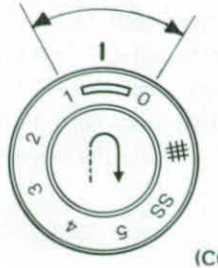

buttonhole foot

Raise the foot and the needle to its highest position. Replace the foot with the transparent buttonhole foot for sewing buttonholes.
Mark the location and the desired length of buttonhole on the fabric using a pencil or tailor's chalk.

Note: *To find the most suitable stitch length, it is better to sew a sample buttonhole on a piece of waste fabric.

*When sewing very fine fabrics and synthetics, decrease the pressure of foot and sew over a piece of paper to prevent yarn distortion.

*The mark on the stitch length dial shows a range of buttonhole sewing. An adjustment can be made by setting the mark, as shown.

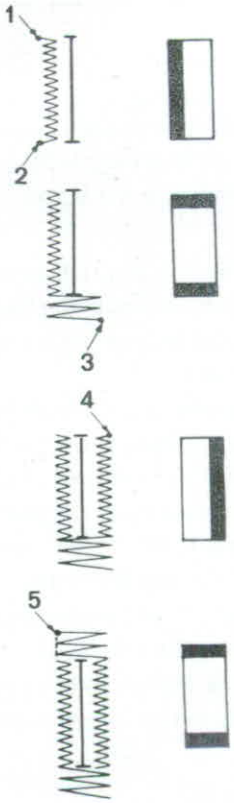



(CONTINUED)

## SEWING BUTTONHOLES (continued)

1. Set the pattern selector at " ▯ ". Then pass the needle thread through the opening in the buttonhole foot and draw both of needle and bobbin threads to the left side. Turn the balance wheel towards you until the needle comes to the point (1).
2. Lower the foot and sew slowly until a desired length is sewn, then stop the machine at (2).
3. Raise the needle and set the selector at " ▭ ". Then sew several stitches of bar tack until the needle is at point (3).
4. Raise the needle and set the selector at " ▮ ", then sew the right side of buttonhole just as the same length as the left side of buttonhole. Stop the machine at (4).
5. Raise needle and set the selector at " ▭ ", then sew several stitches of final bar tack. Stop the machine with the needle at point (5). To lock threads, set the pattern selector at "B (zero point of zigzag width)" and sew a few stitches.
6. Cut the buttonhole open carefully using a seam ripper, taking care not to damage the bar tacks.

Note: *To make a heavier buttonhole, sew twice by repeating the same procedure.



## SEWING ZIPPERS

| | |
|---|---|
| Presser foot | zipper foot |
| Pattern selector | ⊂⊃ |
| Stitch length dial | 1 to 5 |

Raise the foot and the needle to its highest position by turning the balance wheel towards you. Replace the foot in use with the zipper foot.

1. Pin or baste the zipper tape to the fabric and place the work-piece in position under the foot.
   Attach snap on zipper foot so that the needle passes on its left hand side.
   * When starting sewing, both needle and bobbin threads ends should be put away under the foot.
2. Sew on the right side of the zipper by guiding zipper teeth as close as possible to the needle drop. Before the foot reaches the slider on the zipper tape, raise the foot and open the zipper by keeping the needle in the fabric.
   Lower the foot and sew on the remaided of the seam.
3. To sew the left side zipper change position of foot for bring the foot to the left side of the needle. Sew on in the same way as you did on the right side of zipper.

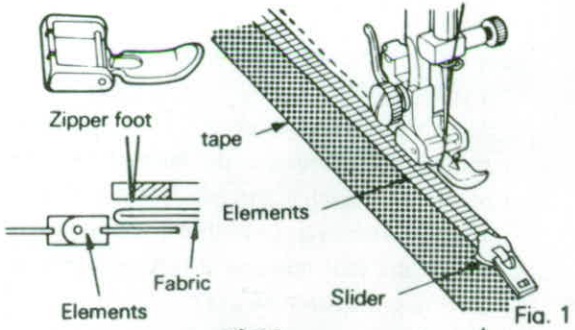
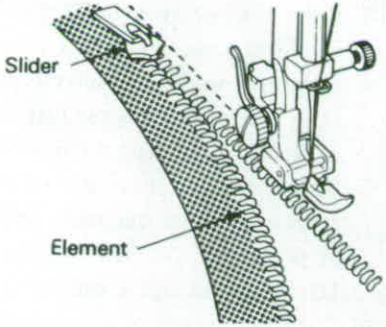


Fig. 1



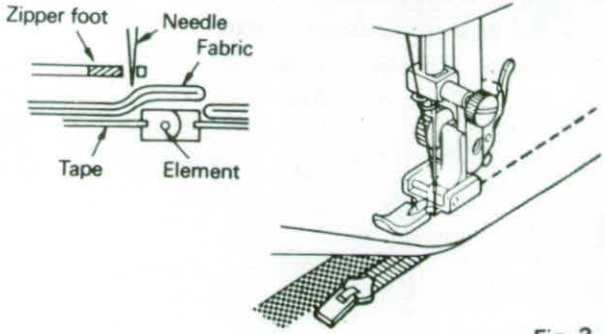
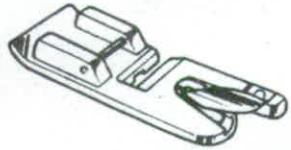



Fig. 3

## HEMMING

| | |
|---|---|
| Presser foot | hemmer foot |
| Pattern selector | |
| Stitch length dial | 1 to 5 |



hemmer foot

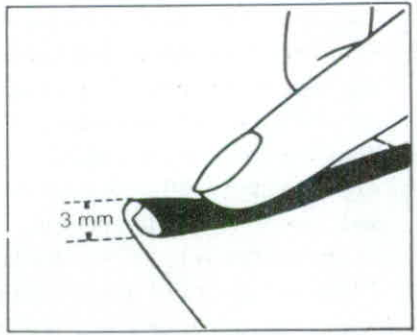
Raise the foot and the needle to its highest position. Fit the special hemmer foot shown above.

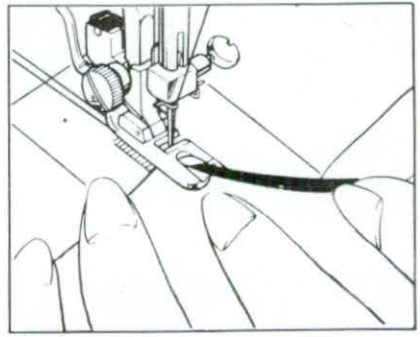
Fold over the fabric edge by about 3 mim (1/8 inches) and place it under the foot. Secure the folded edge with a few stitches. Take out the workpiece and draw the hem into the hemmer foot by pulling on the threads.

Lower the foot and sew the hem.

During sewing, fold the fabric to the left a little and allow it to run into the hemmer foot.

Make sure that the fabric does not move under the right half of the foot. The fabric must be fed into the scroll of the hemmer sufficiently so that the workpiece edge runs freely through the groove under the foot.

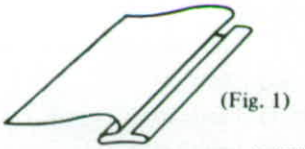


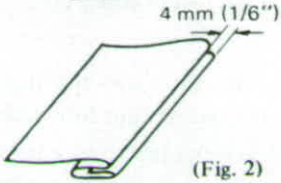
## SEWING BLIND HEMS

| | |
|---|---|
| Presser foot | blind hem foot |
| Pattern selector | |
| Stitch length dial | 1 to 3 |

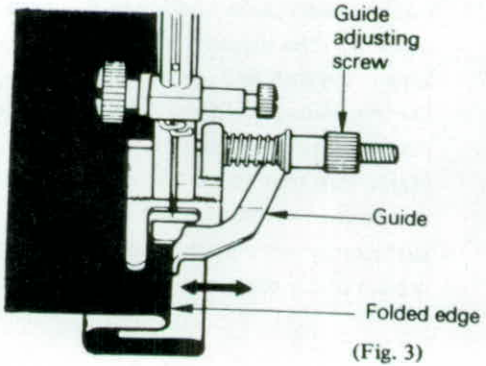
1. Turn up the hem with the desired width and press. (Fig. 1)
2. Fold hem back against the right side of the garment with top edge of hem extending about 4 mm (1/6 inches) to the right side of the garment folded. (Fig.2)
3. Place the garment under the foot so that double-folded edge runs along the hem guide and lower the foot.
   Sew slowly for better control, marking sure the narrow zigzag stitches will fall on the hem edge and wide zigzag stitches will just catch one thread of folded edge. (Fig. 3)
4. Unfold the fabric and you will have a blind stitch hem (Fig. 4)



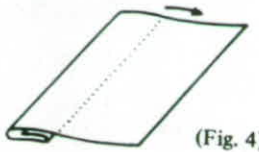
(Fig. 1)




(Fig. 2)




(Fig. 3)



(Fig. 4)

## EMBROIDERY

| | |
|---|---|
| Remove presser foot | |
| Pattern selector . . . . . | ⊂⊃ |
| Stitch length dial . . . . . | ▦ |

### MONOGRAMMING AND FREE-HAND EMBROIDERY (Fig 1)

It is quite easy to sew initials or to work a design by Monogramming or Embroidering. Start by first removing the Presser Foot completely and setting the Stitch Length at " ▦ " setting.

If required draw the initials or name onto the material using tailor's chalk, or use a printed design from an Art and Crafts Shop. Stretch the Fabric tightly into a Hoop and place under the Needle. Lower the Presser Foot Bar (even though no Presser Foot is fitted) and, holding the Top Thread in your Left hand turn the Hand Wheel towards you one full revolution. Pull the Top Thread in order to draw the Bobbin Thread through to the surface of the Fabric.

Keeping the Threads out of the way, start sewing the initial or design, using Straight Stitch or Zig-Zag. When using Straight Stitch move the Hoop quickly for short stitches and slowly for long ones. When using Zig-Zag, the slower you move the Hoop the closer the stitches.

### DARNING (Fig 2)

Prepare the Machine in exactly the same manner as left, but it will usually be found better to use a fine Thread and a slightly thicker Needle.

Stretch the area of the article to be repaired tightly into a Hoop and place under the Needle. Lower the Presser Foot Bar in the same manner as described left, and sew once round the hole to incorporate any frayed edges.

Next, keeping the Threads out of the way whilst sewing, move the Hoop backwards and forwards to cover the hole with vertical lines of stitching, then repeat the operation from side to side until the hole has been completely covered. As with Monogramming, move the Hoop quickly for short stitches and slowly for long ones.

In both operations described left, work carefully, keeping your fingers out of the path of the Needle. Once the Machine is in motion the Hoop must not stand still.

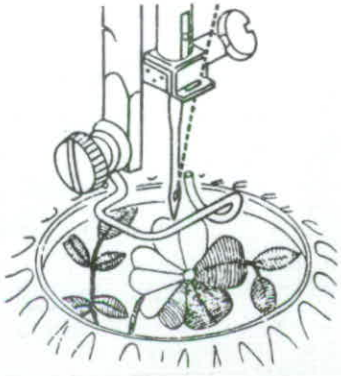


Fig 1

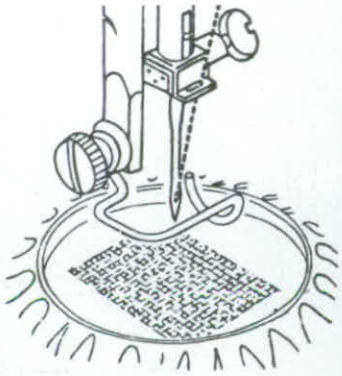
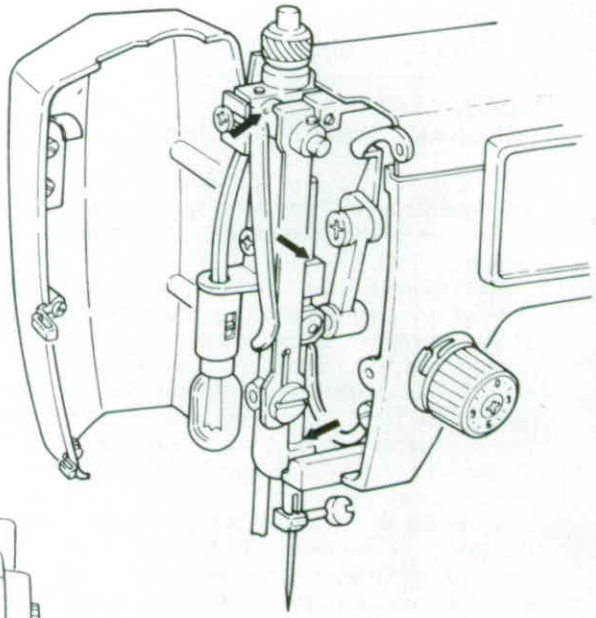


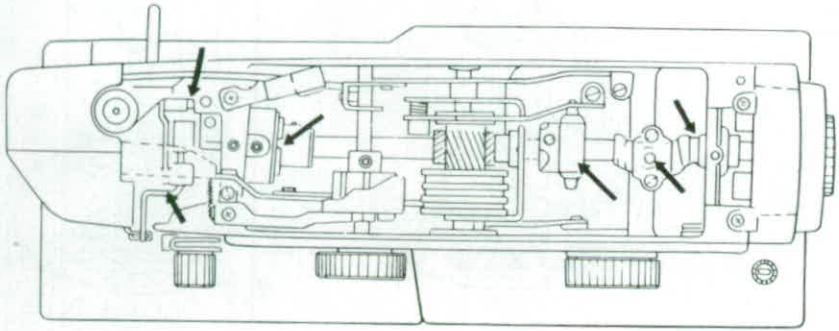
Fig 2

## HOW TO OIL THE MACHINE

The oiling points are marked with arrows in the illustrations. Before oiling they should be wiped clean. Apply one or two drops of a fine quality sewing machine oil. If the machine is in constant use, this should be done every two or three days. If the machine should not run well after being out of use for a long period, apply a few drops of oil to the oiling points and run the machine fast with all covers on for about one minute. Before using the machine again oil it in the usual way.

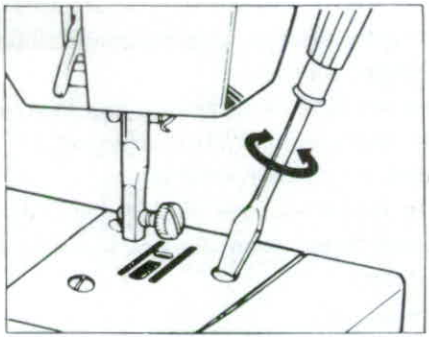
*Do not forget to sew first on waste fabric, in order to soak up any excess oil.

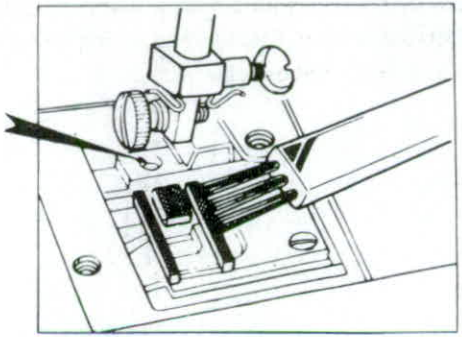




## CLEANING THE FEED-DOG TEETH

It is necessary to keep the feed dog teeth always cleaned in order to ensure smooth sewing.
Remove the needle and the presser foot.
Unscrew the needle plate set screws with a screw driver to take off the needle plate from the machine.
With a brush, clean out dust and lint clogged on the feed dog teeth.
Refit the needle plate.





## CLEANING THE SHUTTLE RACE

Unplug the machine from the power supply.

To remove shuttle:

Raise needle to its highest position and remove bobbin case.

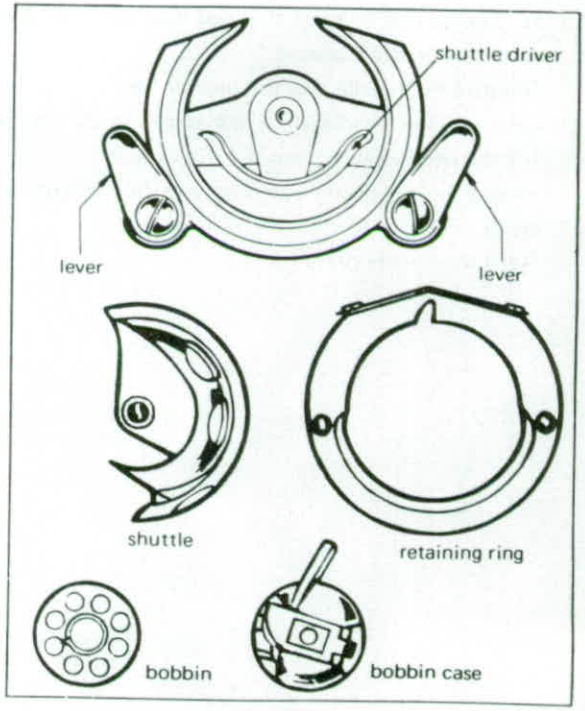
Turn levers away from shuttle and lift out retaining ring and shuttle, by grasping center pin.

Clean the reverse side of feed dog with a small brush. Remove lint and thread from all parts of shuttle and wipe with a lightly oiled cloth.

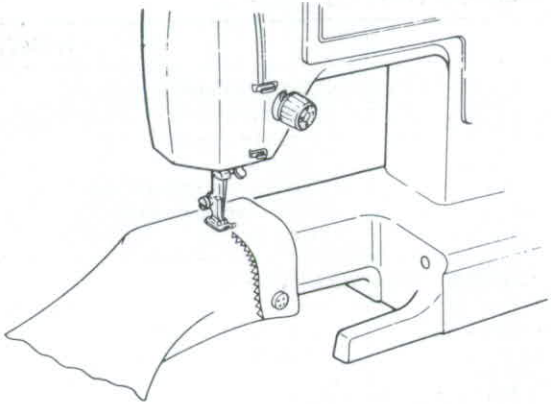
To reassembly:

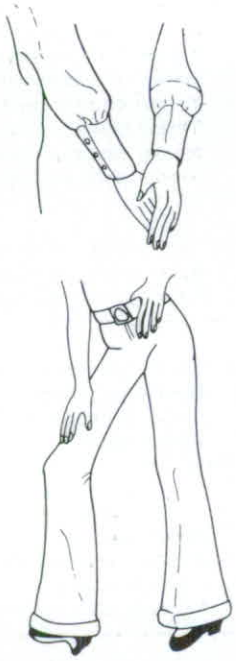
Hold shuttle by center pin and fit carefully back into shuttle race, forming perfect circle with shuttle driver.

Replace retaining ring polished side out, making sure the bottom pin fits into notch. Lock retaining ring by turning levers back into position. Refit bobbin case with bobbin.



## FREE-ARM SEWING





This sewing machine can be used like a flat bed machine, but easily converts to free arm machine by removing the extension table.
The free arm enables you to sew tubular types of pieces more easily.
Just slip the sleeve or pants leg on the free arm as shown above.
You will find many uses for this free arm feature such as:

1. Mend elbows and knees of garments more easily.
2. Sew in sleeves more easily. This is especially true when sewing smaller garments.
3. Applique, embroider or hem around edges of cuffs or pants legs.
4. Sewing in elastic casings in skirts or pants at the waistiline.

## TROUBLE SHOOTING: CAUSES AND REMEDIES

| CAUSE | REMEDY |
|---|---|
| **NEEDLE THREAD BREAKS** | |
| Needle not properly threaded | Thread properly |
| Thread tension too tight | Loosen tension |
| Something wrong with the needle | Replace needle |
| Thread it too heavy for needle | Change |
| Thread check spring is broken | Have a new spring fitted |
| Needle not properly inserted | Insert needle properly |
| Needle plate, shuttle or sewing foot damaged | Replace |
| **BOBBIN THREAD BREAKS** | |
| Bobbin thread entangled because of incorrectly wound bobbin | Wind bobbin correctly |
| Bobbin thread not under tension spring on bobbin case | Thread bobbin correctly |
| **STITCHES ARE LEFT OUT** | |
| Needle not properly fitted on needle bar | Fit needle properly |
| Needle bent or blunt | Replace |
| Needle worn | Replace |
| **NEEDLE BREAKS** | |
| Needle bent | Replace |
| Needle not properly fitted | Fit needle properly |
| Fabric too heavy or too hard | Use needle of correct size |
| You are pulling on the fabric | Do not pull |

## TROUBLE SHOOTING: CAUSES AND REMEDIES

| THREAD FORMS LOOPS | |
|---|---|
| **CAUSE** | **REMEDY** |
| Thread tension not properly regulated | Read instructions for regulating needle-and bobbin thread tension |
| Needle thread properly threaded and/or bobbin thread not properly wound | Thread machine properly and/or wind bobbin thread correctly |
| Thread size not suited to fabric | See "Size of needle and thread" |
| Thread check spring not working properly | Have spring replaced |
| **SHRINKING OR PUCKERING OF THE SEAM** | |
| Tension too tight | Read instructions for regulating needle-and bobbin thread tensions |
| Sewing foot pressure too strong | Read instructions for regulating sewing foot pressure |
| **IRREGULAR STITCHES** | |
| Needle and bobbin threads of poor quality | Use top quality threads |
| Bobbin thread unevenly wound | Re-wind bobbin |
| **MACHINE DOES NOT RUN FREELY AND MAKES A NOISE** | |
| Machine needs oiling | Read instructions on how to oil |
| Dust and thread in shuttle | Read instructions on how to clean shuttle race |
| Wrong oil used, has now clogged machine | Clean machine carefully and re-oil with top quality oil |
| Drive belt tension too tight | Loosen tension of drive belt |

Purchased From

**RICCAR (UK) LTD**
**RICCAR HOUSE, NUFFIELD WAY,**
**ABBINGDON, OXON, OX14 1RS**

**Copyright by Riccar (UK) Ltd.**

Printed in Taiwan

10/88